II. *An Account of an Experiment, ſhewing that actual Sound is not to be Tranſmitted through a* Vacuum. *By Mr.* Fr. Hauksbee, *F. R. S.*

THAT the Experiments already made, endeavouring to produce Sound from a Bell *in Vacuo*, have been altogether ineffectual, is ſufficiently manifeſt: Yet that the loſs of it ſhould be wholly attributed to the abſence of the Air, I think could not without another Experiment be abſolutely concluded, ſince the following Query, (which very well deſerves an Anſwer) might fairly be ſtarted upon this Occaſion.

Whether the Sonorous Body in ſuch a *Medium* might not ſo ſuffer, or undergo ſuch a Change in its Parts, as to be render'd uncapable of being put into ſuch a Motion as is requiſite for the Action or Production of Sound.

Now to ſet the Matter of Fact in a true Light as near as I could, I contriv'd the following Experiment.

I took a ſtrong Receiver, arm'd with a Braſs-hoop at bottom, in which I included a Bell as large as well it could contain. This Receiver I ſcrew'd ſtrongly down to a Braſs-Plate, with a wet Leather between, and was full of common Air, which could no ways makes its eſcape. Thus ſecur'd, it was ſet on the Pump, where it was cover'd with another large Receiver.

ceiver. In this manner, the Air contain'd between the outward and inward Receivers was exhauſted.

Now here I was ſure, when the Clapper ſhould be made to ſtrike the Bell, there would be actual Sound produc'd in the inward Receiver, the Air in which was of the ſame denſity with common Air; and could ſuffer no Alteration by the *Vacuum* on its outſide, ſo ſtrongly was it ſecur'd on all ſides. And as I ſaid before, that if the Sonorous Body ſhould ſuffer in any meaſure, by being in a very rare *Medium*, ſo as to contribute to the loſs of its Sound, that this Method ſeem'd probable to diſcover it.

Thus all being ready for Trial, the Clapper was made to ſtrike the Bell; but I found that there was no tranſmiſſion of it thro' the *Vacuum*, tho' I was ſure there was actual Sound produc'd in the Receiver.

This plainly ſhews, and ſeems poſitively to confirm, That Air is the only *Medium* for the Propagation of Sound.